REMARKS

The claims have been amended to more clearly define the invention as disclosed in the written description. In particular, claims 10 and 12-17 have been cancelled, while claim 11 has been made a proper independent claim and includes the limitations of cancelled claim 10. In addition, the claims have been amended for clarity.

The Examiner has rejected claims 1, 7 and 8 under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 5,146,319 to Engel et al. in view of Japanese Patent Publication No. JP03245682 to Yoshikuni. The Examiner has further rejected claims 10 and 12-17 under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 4,404,584 to Pritchard in view of Yoshikuni.

Applicant acknowledges the allowability of claim 11, and in view of the above changes, respectfully submits that claim 11 should now be allowed.

The Engel et al. patent discloses a digital luminance signal transient improver and peaker, which, as indicated by the Examiner, includes a system for processing a digitized luminance signal to improve the transients and to selectively and variably peak the signal to emphasize the high and low frequencies while controlling the overshoot and undershoot of the signal (col. 1, lines 45-53), the system including a non-linear filter 46 that asymmetrically limits "the signal" (col. 3, lines 23-25). It should

be noted that "the signal" inputted to the non-linear filter 46 is the output from a summer 44 and as such, the relationship with the luminance signal is indeterminable.

The Yoshikuni reference appears to disclose a contour correction circuit which makes a pre-shoot and overshoot ratio of an output luminance signal constant by providing a detection means for detection the ratio of pre-shoot and overshoot in an input luminance signal and controlling the ratio of the pre-shoot and overshoot in a contour correction signal.

The Examiner now states "it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Engle [sic] which discloses controlling the preshoot and after shoot to improve the transients in a signal with Yoshikuni by detecting the input signal preshoot and aftershoot and by compensating for any changes when they are detected."

The subject invention, as claimed in claim 1, "asymmetrically filtering an input signal to detect pre-shoots and after-shoots of transient input signals".

Applicant submits that the Examiner is confusing the terms "pre-shoot" and "after-shoot" with the terms "undershoot" and "overshoot", and as such, is mischaracterizing the Engel et al. patent. In particular, pre-shoot and after-shoot refer to discrepancies occurring before and after an impulse response. This is shown in Figs. 1a, 2a and 2b, in which the ideal impulse

response is shown in Fig. 1a, an actual response with after-shoot is shown in Fig. 2a, while an actual response with pre-shoot is shown in Fig. 2b. It should be noted that the after-shoot in Fig. 2a also exhibits overshoot. These terms are defined in "The New IEEE Standard Dictionary of Electrical and Electronic Terms" by Kurpis, pp. 907, 1001 and 1433, Copyright 1993, which defines "overshoot" as "The amount by which the first maximum occurring in the pulse-top region exceeds the straight-line segment fitted to the top of the pulse in determining Am."; "preshoot" as "A distortion which precedes a major transition"; and "undershoot" as "That part of the distorted wave front characterized by a decaying approach to the final value." It should be noted that both "overshoot" and "undershoot" refer to phenomena that occur after a response transition. However, "pre-shoot" and the concomitant "after-shoot" refer to phenomena that occur **before** and **after**, respectively, the response transition.

Applicant therefore submits that while Engel et al. asymmetrically filters a signal, the system of Engel et al. merely detects whether the after-shoot of the impulse response is overshoot or undershoot and controls the amount of overshoot to undershoot, and that Engel et al. neither discloses or suggests "asymmetrically filtering an input signal to detect pre-shoots and after-shoots of transient input signals".

In view of the above, Applicant believes that the subject invention, as claimed, is not rendered obvious by Engel et al. and Yoshikuna, either individually or collectively, and as such, is patentable thereover.

Applicant believes that this application, containing claims 1-9 and 11, is now in condition for allowance and such action is respectfully requested.

Respectfully submitted,

by _____
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On August 19, 2004

By Bennett Jones

ANNOTATED SHEET SHOWING CHANGES

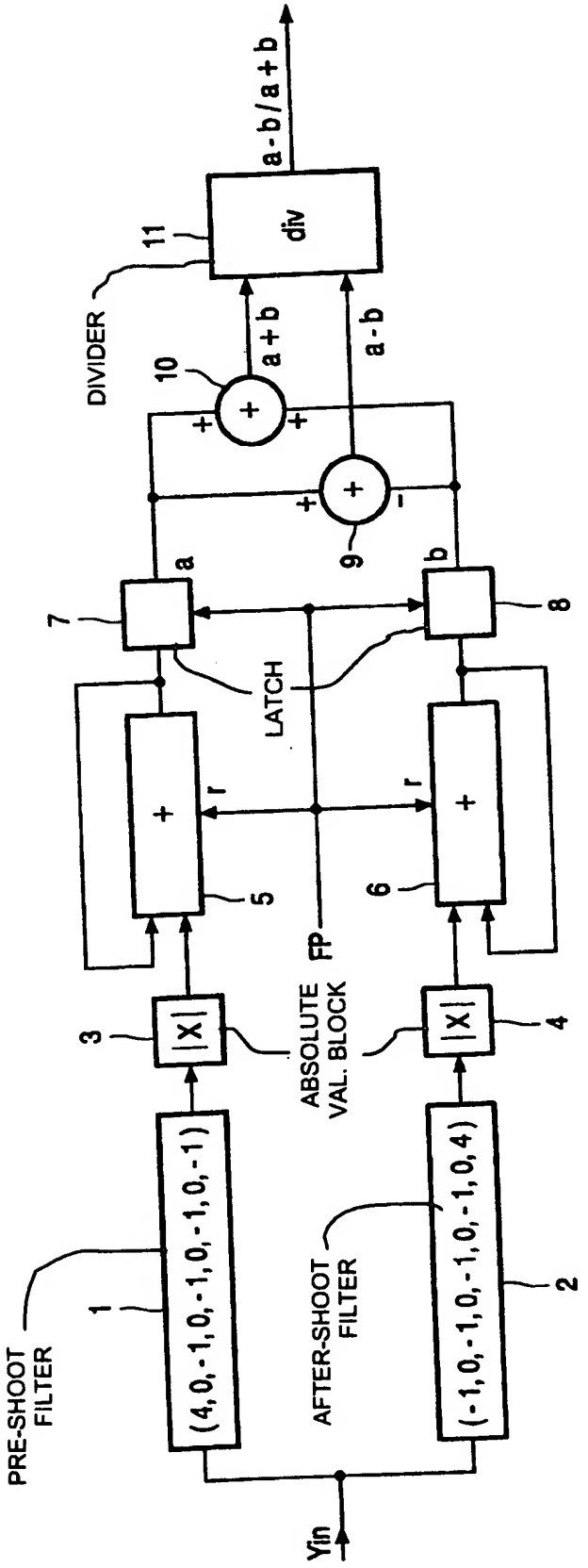

FIG. 3

ANNOTATED SHEET SHOWING CHANGES

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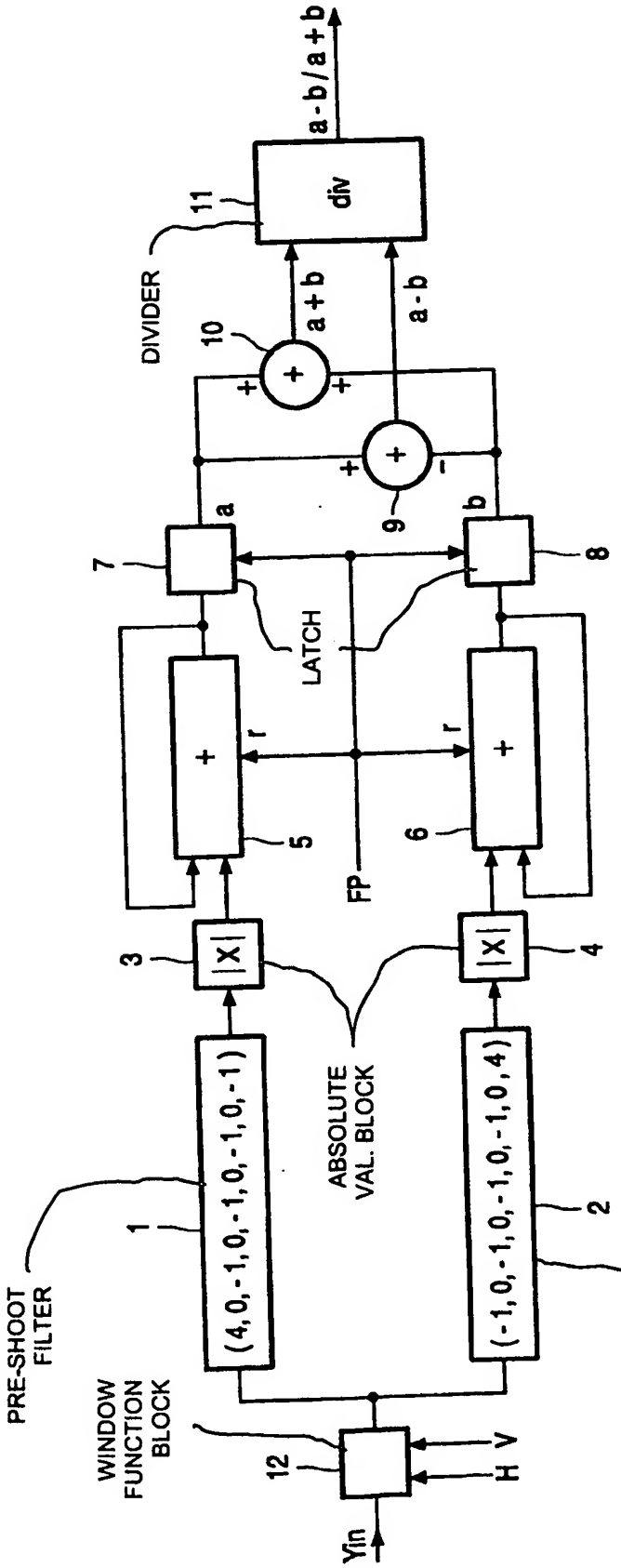

FIG. 4

ANNOTATED SHEET SHOWING CHANGES

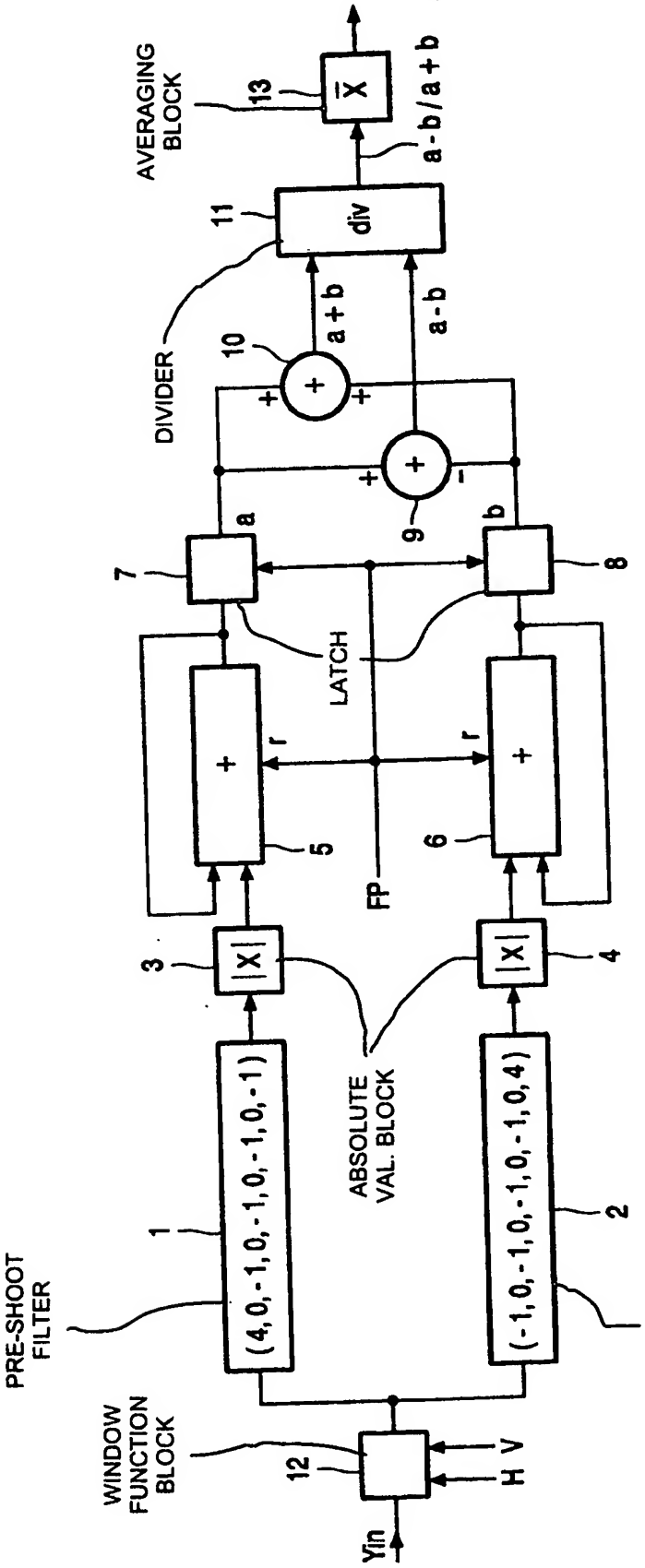

FIG. 5

ANNOTATED SHEET SHOWING CHANGES

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FIG. 7